

**Status of Marine Minerals Environmental Studies as of April 4, 2005**

***Total MMS Environmental Studies Program (ESP) \$ Allocated to Date: \$10,768,732***

***Total of All \$ Allocated to Date on Marine Mineral Environmental Efforts (includes funds from all sources, e.g. ESP, USGS/BRD, LSU-CMI Matching Funds, LDNR, Marine Mineral Program Funds):  
\$14,244,192***

***Compiled by:***

***Barry S. Drucker, Physical Scientist/Physical Oceanographer  
MMS Leasing Division  
Marine Minerals Program***

<b>Study Title</b>	<b>Awarded Amount</b>
<b>COMPLETED STUDIES</b>	
Generic	
Marine Mining Literature Search Study (OCS Study 93-0006, March 1993)	\$155,000
Marine Mining Mitigation and Technology Study (OCS Report 95-0003, July 1996)	\$180,000
Marine Mining Placer Mining Test (Progress reports available)	\$60,000
West Florida Shelf Benthic Repopulation Study (OCS Report 95-0005, Sept. 1996)	\$425,000
Synthesis of Hard Mineral Resources on the Florida Panhandle Shelf (Final Report completed Sept. 1998)	\$149,782
A Numerical Modeling Examination of the Cumulative Physical Effects of Offshore Sand Dredging for Beach Nourishment (MMS Study 2001-098, March 2003)	\$200,000
Development of Criteria to Evaluate Wave Refraction Models (OCS Study 99-0096, Oct. 1999)	\$60,000
Design of a Monitoring Protocol/Plan for Environmentally Sound Management and Development of Federal Offshore Sand Borrow Areas Along the United States East and Gulf of Mexico Coasts (OCS Study 2001-089, Oct. 2001)	\$351,296
Model Development or Modification for Analysis of Benthic and Surface Plume Generation and Extent During Offshore Dredging Operations (Final model delivered December 2003)	\$200,000
Worldwide Analysis of Shipwreck Damage Caused by Offshore Dredging: Recommendations for Pre-Operational Surveys and Mitigation to Avoid Adverse Impacts (OCS Study 2004-0005, Feb. 2004)	\$123,327
Review of Existing and Emerging Environmentally Friendly Offshore Dredging Technologies	\$176,664
	<b>Total of Completed Generic Efforts: \$2,081,069</b>

Site-Specific	
Environmental Surveys of OCS Sand Resources off Virginia (OCS Report 97-0025, January 1998)	\$420,000
Wave Climate Modeling and Evaluation Relative to Sand Mining on Ship Shoal, Offshore LA, for Coastal and Barrier Islands Restoration (OCS Study 96-0059, Oct. 1996)	\$396,171
Environmental Surveys of OCS Sand Resources Offshore Alabama (OCS Study 99-0051, Sept. 1999)	\$498,943
Environmental Report: Use of Federal Sand Resources for Beach and Coastal Restoration in New Jersey, Maryland, Delaware and Virginia (OCS Study MMS 99-0036, November 1999) <b>Note: This was not funded using ESP dollars.</b>	\$450,000
Surveys of Sand Resource Areas Offshore Maryland/Delaware and the Environmental Implications of Sand Removal for Beach Restoration Projects (OCS Study 2000-055, August 2000)	\$384,241
Environmental Surveys of OCS Sand Resources Offshore New Jersey (OCS Study 2000-052, Dec. 2000)	\$599,048
Wave Climate and Bottom Boundary Layer Dynamics with Implications for Offshore Sand Mining and Barrier Island Replenishment, South-Central Louisiana (OCS Study 2000-053, Dec. 2000)	\$393,671
Collection of Environmental Data Within Sand Resource Areas Offshore North Carolina and the Environmental Implications of Sand Removal for Coastal and Beach Restoration (OCS Study 2000-056, Sept. 2003)	\$499,969
Environmental Surveys of Potential Borrow Areas Offshore Northern New Jersey and Southern New York and the Environmental Implications of Sand Removal for Coastal and Beach Restoration (OCS Study 2004-044, November 2004)	\$500,000
Environmental Surveys of Potential Borrow Areas on the East Florida Shelf and the Environmental Implications of Sand Removal for Coastal and Beach Restoration (OCS Study 2004-037, January 2005)	\$550,000
	<b>Total of Completed Site-Specific Efforts: \$4,692,043</b>
Aggregate Studies	
Investigation of Benthic and Surface Plumes Associated With Marine Aggregate Dredging Activities (OCS Study 99-0029, July 1999)	\$140,000
Study of the Cumulative Effects of Marine Aggregate Dredging (OCS Study 99-030, Feb. 1999)	\$100,000
Integrated Study of the Biological and Physical Effects of Marine Aggregate Dredging (OCS Study 2000-054, October 2002)	\$320,000
	<b>Total of Completed Aggregate Dredging Effects Efforts: \$560,000</b>
	<b>Total \$ Expended for All Completed Efforts: \$7,333,112</b>
<b>ONGOING STUDIES (Contracted)</b>	
Environmental Investigation of the Use of Shoals Offshore Delaware and Maryland by Mobile Benthos and	\$500,000

Finfish Species (Site-specific/Generic/Versar) <b>Note: All field work has been completed; data analysis ongoing.</b>	
Analysis of Potential Biological and Physical Dredging Impacts on Offshore Ridge and Shoal Features/Engineering Alternatives and Options to Avoid Adverse Environmental Impacts (Generic/Continental Shelf Associates)	\$400,000
Worldwide Survey of Dredging Impacts on Commercial and Recreational Fisheries and Analysis of Available Mitigation Measures to Protect and Preserve Resources (Generic/EMU, Limited) <b>Note: First dredge observation and interviews was aboard Bean dredge Meridian, offshore Morehead City, NC, December 6, 2004. Second observation planned for offshore Brevard County, Florida, April 14, 2005.</b>	\$249,849
	<b>Total, Ongoing Contracted Studies: \$1,149,849</b>
<b>ONGOING COOPERATIVE and INTER-AGENCY AGREEMENTS</b>	
Winter Waterbird Survey of Offshore Shoals From Northern New Jersey to the Virginia/North Carolina Border (Interagency Agreement with Fish and Wildlife Service)	\$25,000
Field Testing of a Physical/ Biological Monitoring Methodology for Offshore Dredging and Mining Operations (Generic/Site-specific – being conducted at Sandbridge Shoal, offshore Virginia (Cooperative Agreement with Virginia Institute of Marine Science) (Phase 1: \$58,000; Phase 2: \$611,821)(Site-Specific/Generic) <b>Note: Cooperative agreement extended to allow for additional biological data collection post-dredging.</b>	\$669,821
Environmental Investigation of the Long-Term Use of Ship Shoal Sand Resources for Large-Scale Beach and Coastal Restoration in Louisiana (Cooperative Agreement with Louisiana State University) (Co-funded with Louisiana Department of Natural Resources)	\$600,000 (MMS \$) <b>(LDNR providing additional \$600,000 – total project cost is \$1.2 million)</b>
	<b>Total, Ongoing Cooperative Agreements, MMS \$ Only: \$1,294,821</b>
<b>ONGOING STUDIES - MMS/LSU COASTAL MARINE INSTITUTE</b>	
Wave-Bottom Interaction and Bottom Boundary Layer Dynamics in Evaluating Sand Mining at Sabine Bank for Coastal Restoration, Southwest Louisiana	MMS: \$345,172 (LSU Match: \$349,671)
Ship Shoal, Louisiana: Sand, Shrimp, and Seatrout Investigation	MMS: \$145,778 (LSU Match: \$145,877)
New WAVCIS Ocean Observing System on Ship Shoal, Louisiana ( <b>Note: match money being provided by</b>	MMS: \$500,000

<b>LDNR)</b>	(LDNR Match: \$500,000)
	<b>Total, Ongoing MMS/LSU CMI (MMS \$ only): \$990,950)</b>
	<b>Total, Ongoing MMS/LSU CMI Studies including match money: \$1,490,950</b>
<b>ADDITIONAL ONGOING STUDY EFFORTS (Non-ESP)</b>	
Study to Address the Issue of Seafloor Stability and the Impact of Sand Dredging Activities on Oil and Gas Infrastructure in the Gulf of Mexico (Baird and Associates)	\$109,912
	<b>Total of additional ongoing studies: \$109,912</b>
	<b>Total of all ongoing studies (MMS \$ only): \$3,045,532</b>
<b>ONGOING MARINE MINERAL ENVIRONMENTAL STUDY EFFORTS BEING CONDUCTED BY USGS BIOLOGICAL RESOURCES DIVISION (USGS-BRD)</b>	
Focused Analysis/Review of Benthic Assemblages on Ridge and Shoal Features of the U. S. East and Gulf of Mexico Coasts (Generic)	Total BRD \$, one-year effort: \$210,000
Investigation of Finfish Assemblages and Benthic Habitats Within Potential Borrow Areas in Federal Waters Offshore Southeastern Texas and Southwestern Louisiana (Site-Specific) <b>Note: Detailed cruise report available at <a href="http://www.mms.gov/sandandgravel/PDF/TX%20Sand%20Cruise%20Report.pdf">http://www.mms.gov/sandandgravel/PDF/TX%20Sand%20Cruise%20Report.pdf</a>.</b>	Total BRD \$ over 3 years: \$1,020,000
Utilization of Benthic Communities by Fish Populations on Ridge and Shoal Features (Ship Shoal)	Total BRD \$ over 4 years: \$540,000
	<b>Total BRD \$: \$1,770,000</b>